To: CN=Timothy Connor/OU=DC/O=USEPA/C=US@EPA[]
Cc: msuplee@mt.gov[]
From: CN=Tina Laidlaw/OU=MO/OU=R8/O=USEPA/C=US
Sent: Fri 5/8/2009 10:28:49 PM
Subject: Fw: What communities currently pay now for wastewater
January 15, 2009.sum.doc

Tim,

Here is some additional information for Tuesday's discussion. We'll plan to call you at 11 EST at your desk.

Tina

Tina Laidlaw
USEPA Montana Office
10 West 15th Street, Suite 3200
Helena, MT 59626
406-457-5016

----- Forwarded by Tina Laidlaw/MO/R8/USEPA/US on 05/08/2009 04:10 PM -----

"Suplee, Mike" <msuplee@mt.gov>
05/08/2009 02:20 PM
To Tina Laidlaw/MO/R8/USEPA/US@EPA
cc
Subject What communities currently pay now for wastewater

Hi Tina;

Around December 08 to January 09, we (Jeff Blend, myself, and Paul LaVigne) carried out a small survey of current wastewater fees Montana communities are paying, as we wanted to know what the 1% (or 1.5%, or whatever) MHI cap would mean relative to what people currently pay. The methods and results are on page 2-5 of the attached meeting notes.

Notice that small communities generally get hammered with higher rates, as a function of the economics of scale. This is part of the reason DEQ and the group liked the % MHI cap as it evens the playing field; from a individual-paying-wastewater-fees perspective, its more fair as you don't get hammered more just because you happen to live in a smaller community (which many, many Montanans do).

-Mike

P.S. I will get room 243 reserved for 09:00 next Tuesday (May 12th), and I should get you the draft diatom methods memo early next week.

DEQ Nutrient Criteria Affordability Advisory Group
Meeting Summary
January 15, 2009

Introductions
Gerald Mueller, the Nutrient Criteria Affordability Advisory Group (NCAAG) facilitator, and those attending the meeting introduced themselves. A list of the members and others in attendance is attached below as Appendix 1.

Agenda
The NCAAG agreed to the following agenda for this meeting:
- Review of the November 19, 2008 Meeting Summary
- November 2008 Technical Document
- Tiered Approach to the Limits of Technology
- DEQ Alternatives Analysis
  - Presentation of a stratified random survey of current Montana wastewater fees;
  - Overview of key components of the alternatives analysis; and
  - Further discussion of "how expensive is too expensive?"
- Public Entity Affordability Criteria
- Private Entity Criteria
- Next Meeting

November 19, 2008 Meeting Summary
Because not all members had reviewed this summary, approving it was postponed.

November 2008 Technical Document
NCAAG members and others present at this meeting had no questions or comments about the document.

Tiered Approach to the Limits of Technology
Todd Teegarden presented a three tiered approach to the limits of technology developed by the NCAAG's engineering participants, Dave Clark, Scott Murphy, and Dave Aune, with the cooperation of Paul LaVigne and Mr. Teegarden. The engineers were tasked at the last NCAAG meeting with developing a tiered approach, looking at nutrient removal processes with 80-90% reliability. The proposed three tiers were:

1. Limits of Technology - Standards for nitrogen (N) and phosphorus (P) concentrations at the current edge of practical wastewater treatment technology are 0.05-0.1 milligrams of total phosphorus per liter (mg TP/L), and ≤ 3-5 mg TN/L. Multiple filters and chemical addition would be needed for TP removal and in larger basins second stage activated sludge processes would be required for additional N removal. Complying with this tier would require the availability of sufficient funds and careful operation and controls.
2. Intermediate - Additional filters for P removal and larger basin would be needed for additional N removal to meet the following levels, 0.25-0.5 mgTP/L and 4-8 mg TN/L.
3. Common - Biological Nutrient Removal (BNR) processes including SBR (Sequencing Batch Reactor) and MBR (Membrane Bio-reactor) to meet levels of <1.0 mg TP/L and <10 mg TN/L.

In this approach, the limits of technology means that wastewater treatment technology that can achieve the total phosphorus and total nitrogen concentrations provided in DEQ-10 (July 2009) at the end-of-pipe. These would be, at present, 0.05 to 0.1 mg TP/L, and ≤ 3 to 5 mg TN/L.

Question - Does this definition include seasonality?
Answer - For streams, these standards are seasonal and would apply during the three month period from about the middle of July to the end of September. For lakes, the standard would not be seasonal but would address a total annual load of N and P. Lake criteria are still being developed.

Question - Whitefish Lake discharges into a stream that, in turn, discharges into Flathead Lake. How would these standards apply to Whitefish Lake?
Answer - We are not sure. We do not know yet how Flathead Lake functions with respect to nutrients.

Question - Does the treatment technology approach include an upstream component?
Answer - Yes. Addressing non-point sources may create assimilative capacity. However, EPA imposes a reasonable assurance clause, and may not accept a TMDL assimilative capacity before best management practices are applied to the non-point nutrient sources.

Comment - If DEQ takes a super conservative approach to the assurance of the availability of the assimilative capacity, then trading would not occur.

Comment - How permitting is handled will be critical to the City of Helena in the face of cost shifts.
Response - Rule making will provide for site specific considerations that will make the permitting process easier. Waste allocations will be made to all sources.

Comment - A multi-disciplinary approach to permitting is critical.
Response - We are implementing a multi-discipline approach by having higher level managers assume more responsibility.

Question - Do you have cost information for complying with each of the three tiers?
Answer - Tier 1 would be the most expensive, on the order of $30 per gallon per day of treated water. Tier 3 would be very economical, on the order of $2 per gallon per day.

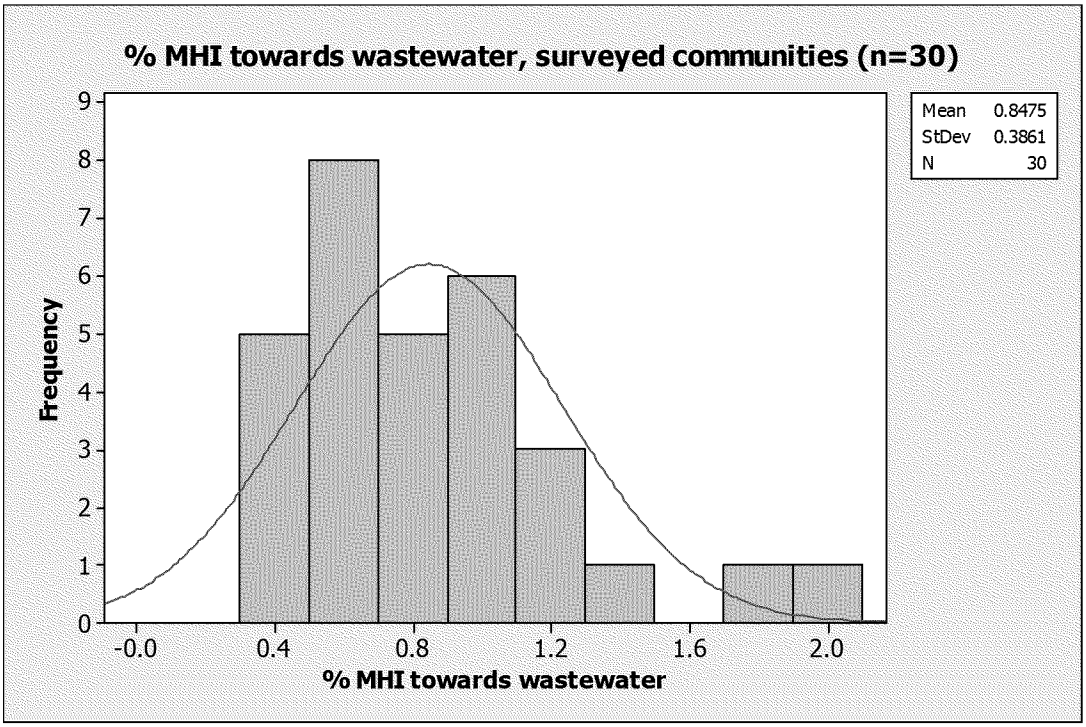
Comment -The City of Bozeman is spending $100 million to apply level 2 technology.

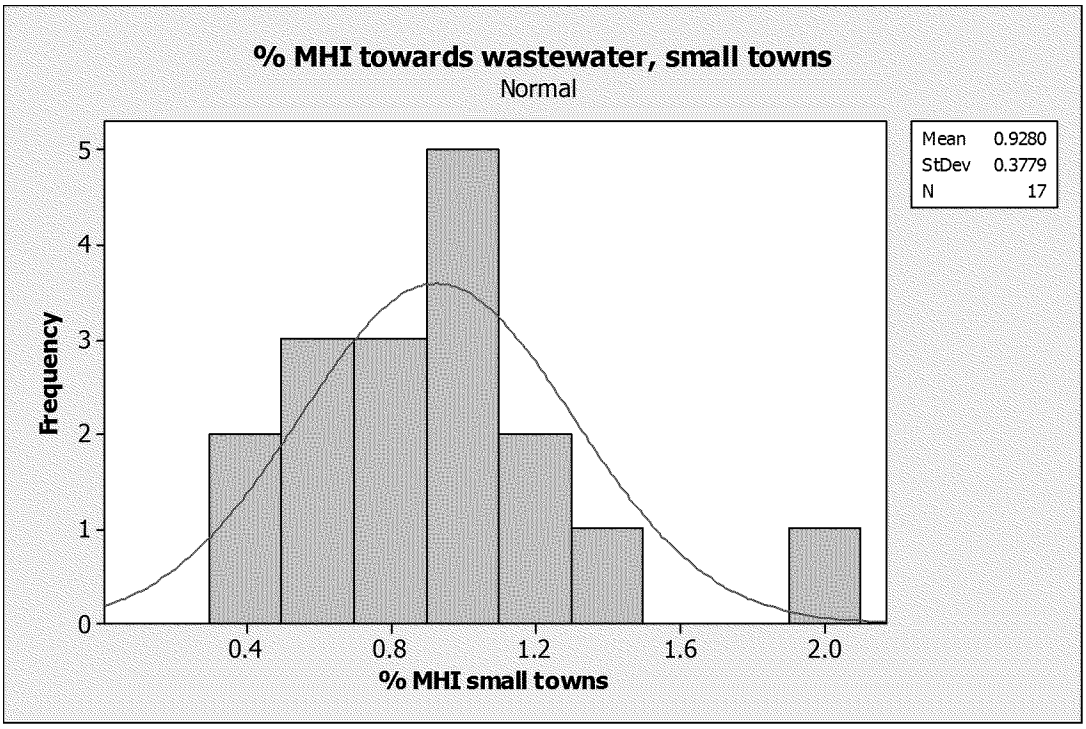
NCAAG Action - Those members of the group present agreed to discuss a median household income (MHI) level for determining an affordability variance before acting on the tiered approach to the technology standard.

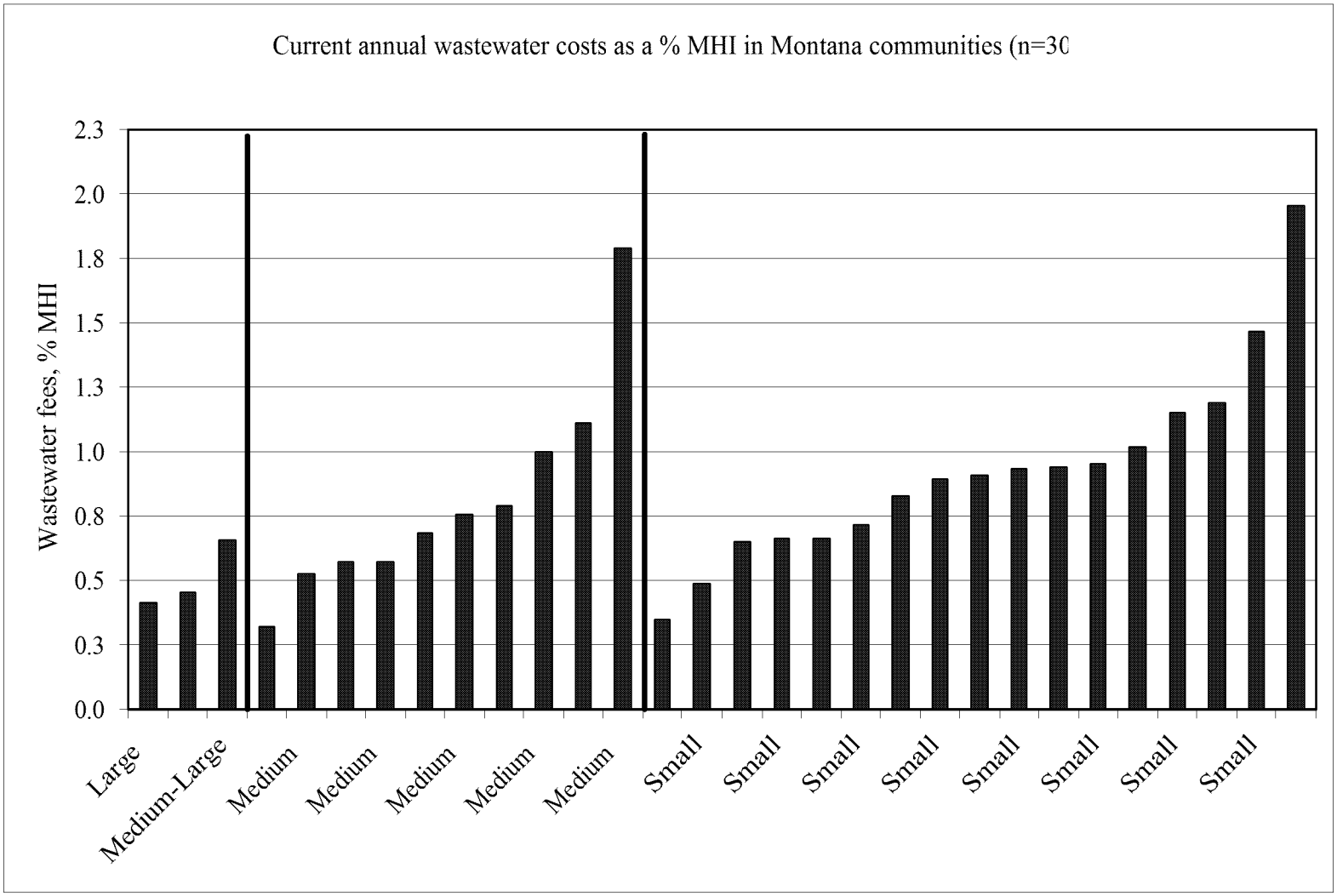
DEQ Alternatives Analysis

Survey of Current Montana Wastewater Fees - Dr. Suplee discussed a stratified-random survey conducted by DEQ (Paul LaVigne and Jeff Blend) to collect a representative sample of fees that Montana communities are currently paying for wastewater treatment, as a function of median household income (MHI). For the survey, Montana communities were placed in one of four categories by population: large communities with populations greater than 10,000; medium-large

communities with populations of 5,000-10,000; medium communities with populations of 1,000-5,000; and small communities with populations less than 1,000. Population data were taken from the 2000 census. To be included in the survey, a community had to meet two criteria: it had to be currently meetings its MPDES permit with a plant that was upgraded in the last 15 years, and it could not have a nutrient-removal facility (only a few are operating around the state). Individual communities from each population category meeting these criteria were chosen using proportional allocation and random sampling. The total number of communities selected was 30. Current per-user waster fee data were then collected and compared to the community MHI using 2000 census data updated to 2008 using a standard formula. Results of survey are shown in the following figures.




% MHI towards wastewater, small towns
Normal
Mean 0.9280
StDev 0.3779
N 17
Frequency
0
1
2
3
4
5
0.4
0.8
1.2
1.6
2.0
% MHI small towns


Current annual wastewater costs as a % MHI in Montana communities (n=30
Wastewater fees, % MHI
2.3
2.0
1.8
1.5
1.3
1.0
0.8
0.5
0.3
0.0
Large
Medium-Large
Medium
Medium
Medium
Medium
Medium
Small
Small
Small
Small
Small
Small
Small
Small

For all communities, the mean expenditure for waste water was at 0.85% of the MHI. For smaller communities, this value increased to 0.93% of the MHI.

Question - How do these values compare to those for areas outside of cities?
Answer - I don't know, but we have previously shown you a comparison of private septic system costs developed by DEQ's Dan Meek with the cost of public systems. The cost of a standard maintained system is $26-28 per month over the life of the system. An unmaintained septic system would cost $37 per month over its life.

Question - Does the MHI percentage calculation include more than just the treatment plant costs?
Answer - Yes. This group earlier decided that the affordability analysis should use all of the waste water utility costs so that it would include the collection system, not just the treatment plant cost.

Comment - Municipal rates do not include septic system capital costs that have already been paid.

Comment - Helena currently has a $150 million treatment plant. Much of this cost has already been paid. If the city's discharge permit limit use of that capacity, then we will not want to hook up any more customers.

Comment - In the case of the bigger cities, the current waste water rate does not include the reserve necessary to replace the existing system.

Question - How much excess capacity is in the current municipal rates?
Answer - The majority of the larger Montana communities have excess capacity.

Question - Are the small towns with lagoons reaching their capacity?
Answer - Most are not reaching their capacity.

Overview of Key Components of the Alternatives Analysis - Dr. Suplee reviewed the content of the flow chart for the process of reviewing compliance with nutrient criteria that was passed out at the October 15, 2008 meeting. Key considerations in the alternatives analysis, i.e., the factors leading up to the TMDL nutrient limits are:

- Are nitrogen (N) and phosphorus (P) concentrations naturally elevated due to a reasonably operated upstream dam?
- Are there near-field effects of an upstream natural lake or wetland that naturally elevate N and P?
- Is N and P contribution by point source(s) insignificant (e.g., $\leq$ 5% of load)?
- What is the potential for achieving some assimilative capacity upstream of the WWTP, from nonpoint source clean-ups? As stated earlier, EPA will not likely allow DEQ to give a permitee the benefit of such cleanups up-front, due to its "reasonable assurance" clause.

Question - How are these factors affected by Judge Molloy's TMDL decision?
Answer - Judge Molloy's decision forbids new pollution discharges into an impaired water body without a TMDL. Once the TMDL is written, this decision no longer applies. The point of the decision is to require completion of the TMDLs. The TMDL process includes provision for a variance.

Question - How do you weigh the relative contribution of point and non-point sources?

Answer - We do not have a specific break point for significance. A 20% contribution by the point source is likely to be viewed as significant. A 4-5% point source contribution would likely mean that DEQ would not push hard on the waste water treatment plants.

Question - The City of Helena's overall contribution is 15-20% to nutrient ground water loading. How will the cost and benefits of additional requirements on the city be addressed?
Answer - We will look across the board at all significant sources. We will take financial considerations for both point and non-point sources.

Question - Shouldn't the 80% contributor be responsible for 80% of the remedy?
Answer - DEQ does not have the authority to regulate non-point sources. We must also take into account in permitting point sources that the TMDL process may be in a different stage that the MPDS permitting.

Comment - The waste water plants are regulated as point sources and have to spend the money necessary to get the permit; however, nothing is happening about non-point sources. We are still asked to support DEQ's legislation.

Comment - Judge Molloy's decision requires looking at waste water permitting needs in the TMDL.
Response - If the affordability criteria are adopted, the affordability will determine the TMDL outcome regarding point sources.

Comment - Industrial and municipal dischargers will remain at the center of the target. They will have to spend money but won't get the appropriate outcome because of non-point sources.
Response - The settlement agreement and court order in the Molloy decision did not specify what streams DEQ must work on by a specific date, except for seven headwater streams. Point source concerns would cause a strong shift in TMDL priorities. DEQ is currently working on TMDLs for the large basins such as the Clark Fork and the Bitterroot.

Comment - While I value the Musselshell, I cannot justify professionally prioritizing this basin. It has been prioritized because the local water users are willing to have a TMDL developed. Public resources should be focused on the cities' issues.
Response - DEQ has made decisions to work in smaller eastern Montana basins because of the funding opportunities.

Comment - Without enforceable regulations for non-point sources, I do not support tightening the controls on cities.

Comment - I like the proportional idea, but there is a trap due to the limits of technology that may mean that we cannot get enough reduction from non-point sources. If you set the N and P nutrient criteria at low levels, you may not be able to accomplish the TMDLs.
Response - Both nationally and in Montana, stratified stream sampling shows that only 10-20% of the total stream miles would exceed the proposed nutrient criteria. DEQ set the criteria based on a public perception survey that ties back to narrative standards-the criteria were set at a demonstrable harm-to-use threshold and not at "pristine".

Question - How many of the stream segments had point sources?

Answer - Most segments with point sources would probably violate the nutrient standards. We need, however, to be clear about the end points of the process we've been discussing We are trying to buy time to allow nutrient removal technologies to improve (i.e., become more efficient and cheaper). It will also buy time for nonpoint source cleanups, trading, etc. to get in place. If after 20 years, they have not, we have the Use Attainability Analysis (UAA) process to relax water beneficial uses, if needed.

Comment - In the late 1970s, legislation allowed counties to adopt sediment and erosion control ordinances. Only Lewis and Clark County did so. Its ordinance was enforced through the conservation district. It is possible to move forward on non-point source control activities. Tools are available to address sediment and erosion control. All land disturbing activities should be required to meet best management practices.

Comment - Cities should get credit for the millions and billions of dollars they have spent to improve water quality.

Comment - In Helena, the city is about 18% of the source of ground water nutrient pollution while agriculture and septic systems are about 50%. There is no plan to address this situation. Existing policy is horrible and the risk to ground water is great.

Question by George Mathieus - Strict standards with compliance plan requirements (i.e., no variance provision) will be a lose-lose situation. On the other hand, site specific rule making will allow flexibility. Why don't you embrace the variance concept?
Response - We support a basin wide cost-benefit analysis approach.

Comment - The Clean Water Act gives DEQ more authority than it is exercising. You are not addressing cumulative impacts. A judge may disallow new septic systems until problems are addressed. You need to tie water and land use together.

Comment by George Matieus - We are asking this legislature to grant us the authority to issue variances. For eight years we have been conducting the science. Only for the last two years have we focused on implementation.

Comment by Dr. Suplee - If DEQ is given the authority, we can conduct flexible rulemaking that will allow variances for affordability based on MHI criteria and for the limits of technology. We expect most variances to be based on affordability rather than technology. The variances would allow cities to get legal discharge permits.

Question - Have you conducted a legal analysis of your ability to issue variances under Montana's Constitution? I suspect that given the exemptions for septics and the failure to conduct cumulative effect analysis, variances will not pass Constitutional muster.
Answer - DEQ's legal staff recommended the variance approach.

Comment - The cities are willing to work in good faith on the 18%, but we need a structure in place so that we can make the necessary investments. We need to get a handle on the growth outside of municipal waste water systems. The cost of existing septic system retrofits which are estimated at $45,000 each will take away our ability to invest in new waste water treatment.

How Expensive Is Too Expensive? - Dr. Suplee asked the group for advice about the appropriate value for the MHI percentage cutoff value for the affordability variance. In other words, what is the maximum amount, in terms of the percentage of its MHI, that a community should be expected to pay for new waste water treatment improvements if it is shown that the community would have substantial and widespread impacts by meeting the instream base numeric nutrient criteria? DEQ intends to include a % MHI cutoff value in its nutrient standards variance rule that should be finalized in about 8-10 months. Dr. Suplee again pointed out that any cost cap based on MHI does not apply to a community's requirement to meet national secondary treatment standards, no matter what the % MHI those costs may be equivalent to.

Comment - The Treasure State Endowment Program uses 0.8% of MHI for grants to upgrade waste water systems. We should be mindful that water prices are increasing for smaller communities because of new regulatory requirements.

Question - Do new water quality regulations also address metals?
Answer - Standards for metals are not new. Compliance schedules can be built into discharge permits.

Question - If a stream is already at 98% of its allowable concentrations for a given pollutant, what would be the requirement on an existing discharger?
Answer - The discharger must meet to standard at the end-of-pipe.

Question - What is the minimum percent of MHI that EPA would allow for a nutrient standard variance?
Answer - We believe that 1% of MHI is the EPA minimum.

Comment - As of yet, Montana has not felt the full effects of the national economic downturn. We will feel these effects soon.

Comment - I am reluctant to go to the membership of the Montana League of Cities and Towns and argue for a higher MHI percentage than the EPA minimum given the problem with the lack of regulation of non-point sources.

Comment - We will have to be able to show benefits to water quality associated with the MHI value chosen.

Question - How often will DEQ revisit the percentage of MHI that it uses in consideration of nutrient standard affordability variances?
Answer - We will revisit the rule every three years.

Answer - You have said in past meetings that you are willing to implement cost-effective technology improvements that benefit water quality during the 20 year variance period. EPA requires a five year permit review; however, if no cost-effective technologies become available during the term of the variance, the permit requirements will not be changed.

Question - What about adopting the affordability criteria with a delayed effective date until non-point pollution regulation is integrated with point source permits?
Answer - The Clark Fork River TMDL was adopted in 2002 at the same levels we are proposing for the N and P standards. Cities discharging to the Clark Fork have been able to get discharge permits.

Comment - The League of Cities and Towns should write to Senator Baucus that the failure to address non-point nutrient sources is imposing costs on cities. The federal stimulus package should require subdivisions to hook up to city waste water systems.

Comment - The problem is at the state level. The state exempts domestic wells from regulation. Subdivision regulations have a 20 acre limit. Individual septic systems are exempt from regulation. As a result, the state is allowing ground water quality to degrade.

NCAAG Action - Those members of the NCAAG present at this meeting agreed to support a 1% of MHI for the affordability variance for the following reasons:
- ***It is apparently the EPA minimum value;***
- ***The economic downturn will make imposing new costs on cities and their waste water customers difficult;***
- ***Several NCAAG members want to see progress on addressing non-point sources along with new requirements on point sources; and***
- ***Details remain to be worked out regarding permitting such as a multi-disciplinary approach.***

Comment by Dr. Suplee - As a result of the Group's modifications to the Substantial and Widespread economic impact analysis process, the Widespread component is now a significant and important part of the process, whereas before it seemed to contribute less to the overall decision.

Public Entity Criteria

Dr. Jeff Blend ran through an example of the application of the public substantial and widespread affordability criteria to Lewistown, including the following worksheets: Worksheet A-Pollution Control Project Summary Info; Worksheet B-Calculation of Total Annualized Project Costs for Required Upgrades; Worksheet C-Calculation of the Total Annual Pollution Control Costs per Household; Worksheet D-Municipal Preliminary Screener; Worksheet E-Data Used in the Substantial Impacts-Secondary Test; Worksheet F- Substantial Impacts: Calculating the Secondary Score; Assessment of Substantial Impacts Matrix; DEQ Widespread Criteria - Factors to Consider in Making a Determination of Widespread Social and Economic Impacts; and Appendix C-Conceptual Measure of Economic Benefits of Clean Water. The spreadsheets used by Dr. Blend were supplied separately from this meeting summary to the NCAAG email list. Dr. Blend's analysis concluded that Lewistown would meet to substantial impact test but would not meet the widespread test.

Private Entity Criteria

Consideration of affordability criteria for private entities was postponed until the next meeting.

Next Meeting

Date, Time and Location

The next meeting is scheduled for 9:00 to 3:00 p.m. on Wednesday, February 11, 2009 in room at the Helena City offices to be announced.

Agenda Topics

The agenda will include the following.

- Review of the November 19, 2008 and January 15, 2009 meeting summaries;
- Further discussion of the tiered approach to the technology variance; and
- Discussion of affordability criteria for private entity.

Appendix 1
NCAAG Attendance List
January 15, 2009

Members

Tim Burton	City of Helena
John Wilson	City of Whitefish
Dick Hoehne	Town of Philipsburg
Scott Murphy	Morrison-Maerle, INC.
Jim Jensen	Montana Environmental Information Center (M.E.I.C.)
Kate Miller	Montana Department of Commerce, Treasure State Endowment Program (for Jim Edgcomb)
Dave Aune	Great West Engineering

Non-Voting Members

Todd Teegarden	Montana Department of Environmental Quality (DEQ), Technical and Financial Assistance (TFA) Bureau Chief
Dr. Jeff Blend	DEQ, Energy Planning & Technical Assistance, Economist
Dr. Mike Suplee	DEQ, Water Quality Planning Bureau (WQP), Water Quality Standards Section, Water Quality Specialist

Other Meeting Participants

Tim Magee	City of Helena
Tom Adams	City of Bozeman
Bob Bukantis	DEQ, WQP, Water Quality Standards Section Supervisor
Paul Montgomory	AMCE, Inc.
Dave Clark	H2R
John Rundquist	City of Helena
Paul LaVigne	DEQ, TFA, Water Pollution Control Revolving Fund Section Supervisor
George Mathieus	DEQ, WQP Bureau Chief
Jenny Chambers	DEQ, Water Protection Bureau Chief
Dean Yashin	DEQ, WQP, Watershed Management Section Environmental Program Manager